

Notice of Allowability

Application No.

10/789,243

Examiner

Devona E. Faulk

Applicant(s)

YANG ET AL.

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/17/2006.
2. ☒ The allowed claim(s) is/are 86-95 and 110.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☒ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: PCT/SG02/00195, SINGAPORE 200200437-2, SINGAPORE 200105345-3 AND SINGAPORE 200105344-6.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Response to Remarks

1. In the response filed 7/17/2006, the applicant has amended claims 86 with subject matter, indicated as allowable to the applicant on 4/15/2006. The examiner called the attorney to suggest an examiner's amendment but the attorney was not able to get a response from the applicant before the case was due out.
2. Applicant has indicated that he is in the process of obtaining certified copies of the priority documents on which foreign priority is based, as requested by the examiner.
3. Claims 1-85 and 107-109 are cancelled.
4. The applicant agreed to an examiner's amendment canceling claims 97-106, which were withdrawn in a previous action.
5. Claims 86-95 and 110 are allowed.

EXAMINER'S AMENDMENT

6. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Bruce D. Jobse (Reg. No. 33,518) on 8/1/2006.

The claims are to be amended as follows:

Claims 96-106: cancel.

7. **Claims 86-95 and 110** are allowed.

8. The following is an examiner's statement of reasons for allowance:

Regarding claims 86 and 93, prior art Pompei (EP 0 973 152 A2) discloses a method for steering a directional audio beam that is self-demodulated from an ultrasound carrier (abstract; Figure 1). Prior art Pompei (EP 0 973 152 A3) discloses a parametric audio system. Prior art Pompei (WO 01/52437 A1) discloses a parametric audio system. Prior art Redding (GB 2 121 174 A) discloses measurement of distance using ultrasound. Regarding claim 86, the prior art or combination of fails to disclose or make obvious wherein the amplitude and phase of said audio signal is adjusted in a first amplitude and phase adjustment module and the amplitude and phase of said carrier signal is adjusted in a second amplitude and phase adjustment module and combine outputs of said first and second amplitude and phase adjustment modules to generate an ultrasonic beam driven in said direction by said modulated carrier signal. Regarding claim 93, the prior art or combination thereof fails to disclose or make obvious performing a square root operation on the audio signal to generate a square rooted signal; alternating the gain of the square rooted signal between positive and negative gain values at selective locations to generate a flipped signal, wherein the selected locations of the signal are minimum turning points of the signal; modulating the flipped signal onto a first ultrasonic carrier wave; and offsetting the audio signal by a predetermined amount prior to performing the square root operation to ensure that the square root operation only results in real values. Therefore the prior art or combination

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thereof fails to disclose or make obvious a method of processing an audio signal as claimed.

Claims 87-92 and 110 are allowed due to their dependency on claim 86 and claims 94 and 95 are allowed due to their dependency on claim 93.

9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DEF


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